

1. A synthetic nucleic acid sequence which encodes α -galactosidase, wherein at least one non-common codon or less-common codon has been replaced by a common codon and wherein the synthetic nucleic acid has one or more of the following properties: it has a continuous stretch of at least 90 codons all of which are common codons; it has a continuous stretch of common codons which comprise at least 33% of the codons of the synthetic nucleic acid sequence; at least 94% or more of the codons in the sequence encoding the protein are common codons and the synthetic nucleic acid sequence encodes a protein of at least about 90 amino acids in length; it is at least 80 base pairs in length.

2. The synthetic nucleic acid sequence of claim 1, where the α -galactosidase nucleic acid is inserted into a non-transformed cell.

3. The synthetic nucleic acid sequence of claim 1, wherein the number of non- common or less- common codons replaced or remaining is less than 15.

4. The synthetic nucleic acid sequence of claim 1, wherein the number of non- common or less- common codons replaced or remaining, taken together, are equal or less than 6% of the codons in the synthetic nucleic acid sequence.

5. The synthetic nucleic acid sequence of claim 1, wherein all non- common or less- common codons are replaced with common codons.

6. The synthetic nucleic acid sequence of claim 1, wherein at least 96% of the codons in the synthetic nucleic acid sequence are common codons.

7. The synthetic nucleic acid sequence of claim 1, wherein at least 98% of the codons in the synthetic nucleic acid sequence are common codons.

8. The synthetic nucleic acid sequence of claim 1, wherein all of the codons are replaced with common codons.

9. A vector comprising the synthetic nucleic acid sequence of claim 1.

10. A cell comprising the nucleic acid sequence of claim 1.

11. A method of producing α -galactosidase comprising culturing the cell of claim 10 under conditions in which the nucleic acid is expressed.

12. A method for preparing a synthetic nucleic acid sequence encoding α -galactosidase which is at least 90 codons in length, comprising:

identifying a non-common codon and a less-common codon in a non-optimized gene sequence which encodes an α -galactosidase protein; and

replacing at least 94% of the non-common and less-common codons with a common codon encoding the same amino acid as the replaced codon.

13. The method of claim 12, wherein at least 96% of the non-common and less-common codons are replaced with a common codon encoding the same amino acid as the replaced codon.

14. The method of claim 12, wherein at least 98% of the non-common and less-common codons are replaced with a common codon encoding the same amino acid as the replaced codon

15. The method of claim 12, wherein the nucleic acid sequence encodes a protein of at least about 105 or more codons in length.

16. A method of providing a subject with α -galactosidase, comprising:

providing a synthetic nucleic acid sequence that can direct the synthesis of an optimized message for α -galactosidase;

introducing the synthetic nucleic acid sequence into the subject; and

allowing the subject to express the α -galactosidase, thereby providing the subject with the α -galactosidase.

17. The method of claim 16, wherein the synthetic nucleic acid is introduced into a cell.
18. The method of claim 17, wherein the cell can be an autologous, allogeneic, or xenogeneic cell.
19. The method of claim 17, wherein the codon optimized synthetic nucleic acid sequence is inserted into the cell *ex vivo* or *in vivo*.
20. The method of claim 17, wherein at least 94%, or all of the codons in the synthetic nucleic acid sequence are common codons.
21. The method of claim 17, wherein at least 96%, or all of the codons in the synthetic nucleic acid sequence are common codons.
22. The method of claim 17, wherein at least 98%, or all of the codons in the synthetic nucleic acid sequence are common codons.
23. The method of claim 17, wherein the number of codons which are not common codons is equal to or less than 15.
24. The method of claim 17, wherein the subject has a disorder characterized by an α -galactosidase deficiency.
25. The method of claim 24, wherein the subject has Fabry disease.

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